



THE RICHMOND HAM

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AUGUST 2012

The RICHMOND AMATEUR RADIO CLUB will meet Friday, August 10, 2012, 7:00 PM, at the Bon Air United Methodist Church, 1645 Buford Road.

PROGRAM: Our August program will feature our own Jim Bates KJ4WLH describing his experiences with remote control station operation.

Coming Events:

August Club Meeting, August 10, 7:00 PM.
The Diabetes Foundation walk, Step Out to Fight Diabetes is scheduled for Saturday October 13 at Saint Mary's Hospital.
VE Testing Session, Sept 8, 9:00 AM

Club Members!

If you are not receiving your copy of the Club's monthly newsletter, please contact Richard, WA4FEH, RARC's Treasurer, at wa4feh@gmail.com or phone 743-3899.

Getting to know this month's speaker

For Jim Bates, KJ4WLH, it all began with a toy AM radio kit, the kind many of us built. There was something magical about building a device that could receive radio signals, but required no power source. The content was not important. The attraction was the marvel of technology.

It was some years later before Jim got serious about getting a ham license. He went from no license to Extra class in less than six months. Jim has been very active since getting his license. He is the gateway administrator of our D Star repeater and net control for the weekly RARC D Star net, serves as a Volunteer Examiner, will be coordinator of the Club's Boy Scouts of America Jamboree on the Air in October, and is the current president of the Metropolitan Repeater Association whose website he recently updated.

Jim has written a number of articles for this newsletter. Some of those articles dealt with remote control station operation. At the August meeting Jim will be doing a demonstration of remote operations and elaborating on his great articles. Be prepared for an impressive demonstration with plenty of equipment in the room so that you can actually see how far remote control technology has come.

From the Prez

I started writing this piece while on a cruise ship in the Baltic Sea, thinking I would email it to our editor from the ship as we were using the satellite based internet connection rather frequently. It made me think of how accessible things are these days due largely to the

internet, but in my case, also due to the radio links between the ship, the satellite and the ground station. Last year the Tech Committee briefly considered whether the Club should embark on a project to set up a remote controlled HF station. The idea was that many of our members do not have the ability to operate HF due to antenna restrictions. In some cases, even those of us who had HF antennas, move into retirement communities where we have to give up many of the things we enjoyed before including the HF antenna arrays. So it seems somewhat inevitable that many of us will have to downsize some day, and that will result in the loss of HF operations.

The Tech Committee decided to defer consideration of setting up a remote station until we had completed the D Star repeater project, including the gateway connection. That project is now largely finished, so the time is ripe to take on a new project if there is sufficient interest among the members.

I have asked Tech Committee chair Tom Flippen and his committee to study the idea of the Club sponsoring a remote HF station that would be available to members to operate over an internet connection. The technology has finally evolved to the point that this is feasible from a technical standpoint. There are a number of remote HF stations in some pretty exotic places that can be operated now over the internet.

As with any project, it will only succeed if the membership is supportive. The first step is to determine whether there is enough interest by those who would use such a station. We all know that hams sometimes build things just to prove that it can be done. In this case, we know it's possible, but we need to know if such a project warrants the investment of time, effort and money that would be required.

It is quite timely that our August speaker, Jim Bates, will be demonstrating remote operations. Please share your thoughts, pro or con, with Tom and the Club leadership on whether the Club should pursue sponsorship of a remote controlled HF station.

73, Win

D-STAR Note

Our digital repeater usage continues to grow as more members acquire D-STAR radios and install D-STAR hotspots. In addition to our regular Wednesday night net on the VHF D-STAR repeater, we link that repeater to Reflector 025C at 9:00 PM on Wednesdays for the National Capital Region D-STAR net. On Sunday nights at 9:00 pm, we link the UHF repeater to Reflector 002A for the Southeast D-STAR Weather Net. Information on gateway registration and linking is on the Club website at <http://rarclub.net/repeaters/D-STAR/> or contact Jim, KJ4WLH or Win, WA4SSG, for assistance.

Fall 2012 RARC License Classes:

September is fast approaching! Let that prospective ham know that the club has classes and to get those pencils sharpened and new batteries for the calculator!

Bruce MacAlister, W4BRU, RARC radio school coordinator

RARC VE News

Allan, WA3J, submitted the following report on VE Exams for July: We gave 11 tests on July 14th with results of 4 Techs, 2 Generals (1 zero to General) and 1 Extra.

Note: The new Extra question pool became effective July 1, 2012, so be sure to study the correct questions for your Extra upgrade.

Our next VE testing session will be **Saturday, September 8th, 9:00 AM**, at the Bon Air United Methodist Church.

If you have questions about a session, please see our website, www.rarclub.net/ or contact Allan, WA3J, at 804-399-8724, or wa3j@arrl.net.

July Meeting Minutes

Meeting Date: July 13, 2012

Meeting Time: 7:00 PM Called to order at 7:05 PM

Presiding Officers: Win Grant, WA4SSG, President, Pete Fundinger, AA4PF, Vice- President, Richard Arnold, WA4FEH, Treasurer and Patricia Johnson, N8WEA, Secretary

The President called the meeting to order and welcomed all including several visitors: Bob Lockwood, NC4U, Scott Galloway, AE4TC, Karen Galloway, KG4GNN, Kathleen LaJoie (Bruce MacAlister's granddaughter)

The June minutes were approved and motioned to accept.

The June Treasurer's report was provided by the treasurer, Richard Arnold, WA4FEH.

Richard reported that \$1,399.99 was spent to purchase a new repeater controller. The account is still substantially stable. (we aren't broke) ☺

One new application had been submitted. Michael Patterson, WN4JKD was welcomed as a new member. Richard also announced that the club had lost a former longtime member, Lucia F. Porter.

Old Business:

- Allan Johnson, WA3J, reported that the testing on field day was a success. Next year the club would like to publicize the testing and encourage prospective hams to study for their test and attend field day for some hands on experience. Congratulations for receiving extra points on field day for having a testing session set up. ☺
- Testing will also take place tomorrow, July 14, for anyone interested...9:00 a.m. here at the church.
- Joe Palsa, K3WRY reported that a meeting was held with Chesterfield County Emergency

Services. A draft MOU has been put together that will include amateur radio operators as a part of the government emergency plan.

- Dan Bryant, KK4FLM has volunteered to help out with refreshments... thanks to Dan.
- Grayle Hundley, KF4USV, has offered to coordinate rides to the club meetings. If you know of anyone who needs transportation, please contact Grayle at 730-0455.
- Win announced that volunteers are still needed to plan the 100th anniversary of the club. If you are interested in helping out, please let Win know.
- A special recognition was given to Ron and Barbara Chase for all their dedicated work to the club. They have been editors of the newsletter for several years as well as coordinating and helping out with many other events. (thanks for many years of refreshments, too). ☺
- Armand Hamel, WA1UQO, has accepted the responsibilities of newsletter editor. Thanks to Armand for taking on this challenge.

New business:

- The new D-star controller has been purchased and installed. Thanks to Jim Bates, KJ4WLH, for all his hard and dedicated work. Jim has everything updated. Gateway is very reliable now and enjoyed by many folks.
- Jim reminded everyone to sign the form on the back table if you participated successfully in the Radio Run. There is also a survey online, if anyone is interested in completing. Jim will be sending all the results for the month to ARRL. Thanks to Jim for coordinating this event. Many reported that it was a lot of fun.
- Pete Fundinger announced that he had brought several electronic items for anyone who is interested (free stuff). Take and enjoy!
- Dave Meier, N4MW gave a quick update on 900 mhz radios and the soon to be on the air repeater. He purchases used Kenwood radios, tunes them up, and then sells them for amateur use. He had several radios on display at the meeting. See Dave if you are interested in purchasing a radio.

There was no further business, so the meeting was adjourned @ 7:20 PM. The program followed with guest speaker Joe Palsa, K3WRY. He presented a very informative slide show presentation demonstrating "grounding for amateur radio operators". The program was enjoyed by all.

Respectfully submitted,
Patricia Johnson, N8WEA

Public Service

Submitted by Roy Schultz

The Diabetes Foundation walk, Step Out to Fight Diabetes, is scheduled for Saturday October 13 at Saint Mary's Hospital.

D-Star Gateway Feature update

Submitted by Jim Bates

I have installed, configured, and placed into production a software package called "MonLink". Information related to the software can be found at this site: <http://wb4fay.com/util/>

The short summary is that this software will provide the following features:

- Automatically link and unlink the 70cm repeater to the REF025B reflector Mon-Fri from 7am until 7pm
- Automatically link and unlink the 2m repeater to the REF025C reflector Wed night from 8:55pm until 10pm for the DC Area D-Star Net
- If a repeater is currently linked to any other repeater or reflector, the MonLink feature will transmit a status message using both phone and data. The message is essentially this "Linked to <REPEATER> or <REFLECTOR>".

There are other features that it can do, but these are the only ones that we're planning on using in the immediate future.

If, however, you see something in the documentation set that you think is interesting or would be useful - please let me know and we'll see what we can do!

900 MHZ Repeater on the air!!

The first 900 MHz repeater is on the air from downtown Richmond right now. It is on 927.0500 / 902.0500 MHz and requires a 100.0 Hz PL tone to access it. It also transmits 100.0 Hz PL on its output.

If you have one of the Kenwood TK-981 radios that N4MW and I (Fred Towers) have set up and distributed in Virginia, mainly in the Richmond metro area, you access the repeater by:

1. Use the up and down arrow buttons on the right side of the radio to select System 32
2. Use the "C" and/or "D" buttons to select the group which says "927.0500 R"

You have 100.0 Hz PL on transmit and on receive on all System 32 and System 30 frequencies in those 981's.

Thanks to the FieldComm Association (<http://www.fieldcomm.org/v3/>) for providing the site, feed line, and antenna.

Thanks to N4MW for the engineering, metal work, time,

and sweat to put together this repeater, a Motorola Quantro, using Motorola parts he and I obtained.

Fred Towers
WB4KXS

Don't let this keep you awake tonight!

Scientists Create Wi-Fi That Can Transmit Seven Blu-ray Movies Per Second

If you think your [home Wi-Fi connection is fast](#), think again. Scientists have been working on a new way to transmit data wirelessly, and they can now transfer a scorching 2.5 terabits of information per second. Let's put that another way: that's over 8,000 times faster than Verizon's fastest wired home internet connection, [FIOS](#), that only manages a paltry 300Mbps. Or, to put it in real terms, it's the same as transmitting seven full Blu-ray movies *per second*. Basically, this is crazy fast. But how the hell do they do it? Well, the team of American and Israeli researchers have used a neat new concept, where the electromagnetic waves that usually carry data are twisted into vortex beams. [ExtremeTech describes the concept well](#):

These twisted signals use [orbital angular momentum](#) (OAM) to cram much more data into a single stream. In current state-of-the-art transmission protocols (WiFi, LTE, COFDM), we only modulate the spin angular momentum (SAM) of radio waves, not the OAM. If you picture the Earth, SAM is our planet spinning on its axis, while OAM is our movement around the Sun. Basically, the breakthrough here is that researchers have created a wireless network protocol that uses both OAM *and* SAM.

The combination of the two provides some amazing possibilities. So far, the researchers, from University of Southern California, NASA's Jet Propulsion Laboratory, and Tel Aviv University, have twisted together eight data streams, each operating at 300 Gbps, to achieve the new record of 2.5 terabits per second. At the moment, they've only transmitted signals as far as 1 meter. That should be scaled up before long—though the researchers admit 1 kilometer is probably an upper limit. What's perhaps most interesting is that the technique can be used to twist together an awful lot of slower data connections. The researchers, who [have published their findings in Nature](#), explain that in theory it should be possible to twist together hundreds or even thousands of conventional LTE signals into a single beam. That ought to help address the [impending bandwidth crisis](#). Of course, all that remains is for the team to develop the technology into something robust enough to use on a commercial scale—and there's no telling how long that might take. [[Nature](#) via [ExtremeTech](#)]

Thoughts on the June Radio Run

Glad it's over, and looking forward to doing it again. If that seems like a contradiction of sorts, well maybe it is. The radio run was sort of like those trips you may have taken as a kid on a Sunday afternoon. Not going anywhere in particular – just enjoying the ride. By the end of the month however, it definitely had an "Are We There Yet?" feeling. All in all it was pretty interesting. I ran CW at 5 watts into a 40M Carolina Windom in my attic. No surprise that most of my QSO's were stateside, but the log does show Serbia, Aruba, Sweden, Ireland, Quebec, Hungary, Cuba, Nova Scotia and Ontario. Not too bad for a little pistol! The best part, as always, were some of the interesting characters I met along the way. The serendipitous standout was a fellow named John (K3WWP). After a nice Chat on 40 meters, I looked him up on QRZ.com. I knew his call was familiar!! John was the Ham I had read about in an issue of QRP Quarterly. He has been making a contact a day since August 5, 1994! Back in April, while having a conversation with Jim (KJ4WLH), I mentioned having read about John and that a contact a day might be what I needed to get my CW back up to something not too embarrassing. Jim ran with that idea and the 1st RARC Radio Run was born. Small World – I was John's 6536th consecutive daily contact.

I don't know if the club will do this again, but if they do, I'm ready. And if you didn't get to work it into your busy schedule this time I think you'll enjoy it next time. Like the ad on TV says "Try it, You'll Like It". You never really do know who is out there ready to answer your CQ.

Armand (WA1UQO)

Club Info...

- RARC meets on the second Friday of each month at 7:00 PM, at the Bon Air United Methodist Church, 1645 Buford Road.
- We offer 10-week license prep classes in September and March with exams following.

- Members provide VE testing sessions on odd-months during the year.

FCC EXAMS EVERY MONTH on the SECOND SATURDAY. For January and all odd-numbered months: Bon Air United Methodist Church, 9 AM. Call coordinator, Allan Johnson, WA3J, 399-8724, or visit <http://www.rarclub.net/>.

For February and all even-numbered months, FCC test sessions are provided by the RAVE group. Coordinator, Pat Wilson, W4PW (932-9424) has information on his website <http://w4pw.org>.

RARC has the first D-STAR digital repeater in the area. 147.255 (+) and 443.7125 (+). We now have the gateway tied into the worldwide D-STAR network.

The Club sponsors several radio nets each week. Join in for the informative discussions and fun.

Sunday	7:00 PM	50.135	USB
	7:30 PM	52.525	FM
Wednesday	7:00 PM	28.475	USB
	8:00 PM	147.255	D-STAR Repeater
	8:15 PM	145.730	Packet

- Join the Richmond Amateur Radio Club. You don't have to have a ham license, just have a genuine interest in the hobby.

Annual Dues are:

80 and over	\$0
Age 12 and under	\$5.00
Age 13 to 18	\$10.00
Regular Membership	\$15.00

- Lots of information about the Club and our activities is available on our website, www.rarclub.net. Check it out!

Richmond Amateur Radio Club's 2012 "Radio Run"

A "fun" orientated activity; organized to "encourage" Ham's to "Get on the Air!"

The Richmond Amateur Radio Club (RARC) sponsored the 2012 "Radio Run" during the month of June. The "Radio Run" has a single purpose – encourage Hams (and "want to be" Hams!) to stop listening and start talking! Use the transceiver, press the PTT, crank up the computer and get PSK contacts – do something that generates Amateur Band RF!

The "rules" of the activity were intentionally easy to meet.

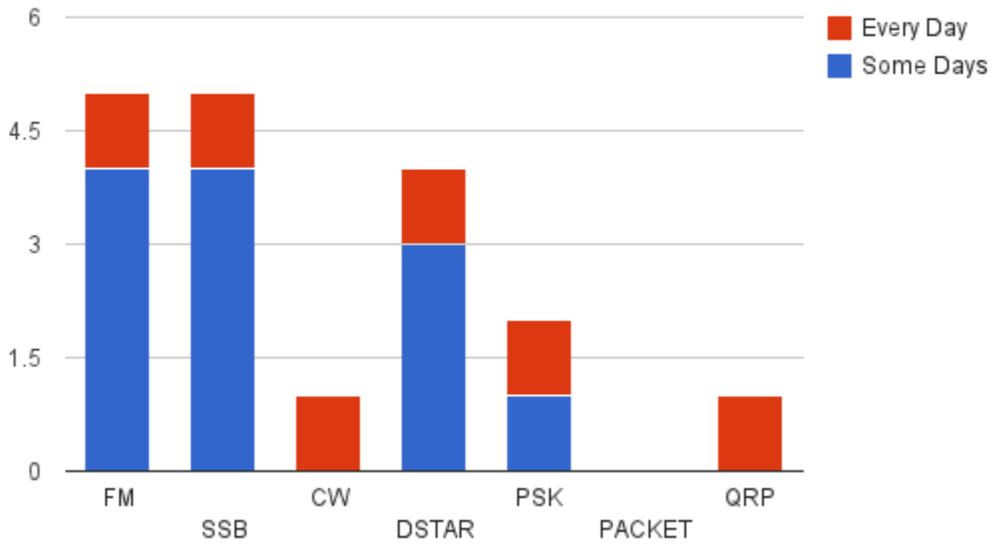
1. You must make at least 1 (one) QSO each day of the month of June
2. You must operate on an Amateur Band/Frequency
3. You must generate RF on an Amateur Band/Frequency at your station
4. If you are NOT a licensed Amateur Radio Operator you must listen to an Amateur Band/Frequency using an RF receiver
5. Not Allowed (QSO does not count)
 - a. DV-Dongle (the blue model)
 - b. IRLP using your phone (the RF generated by "your station" isn't on an Amateur Band!)
 - c. Echolink, etc.
 - d. No "radio-reference.com" or internet based radio monitoring sites for listening
6. The "spirit" of the "Radio Run" is about YOU generating (or receiving) Amateur Band RF

We use the honor system for keeping track of the "winners". RARC is proud to announce the list of Amateur Radio Operators who successfully completed the June 2012 RARC "Radio Run" (in alphabetical order):

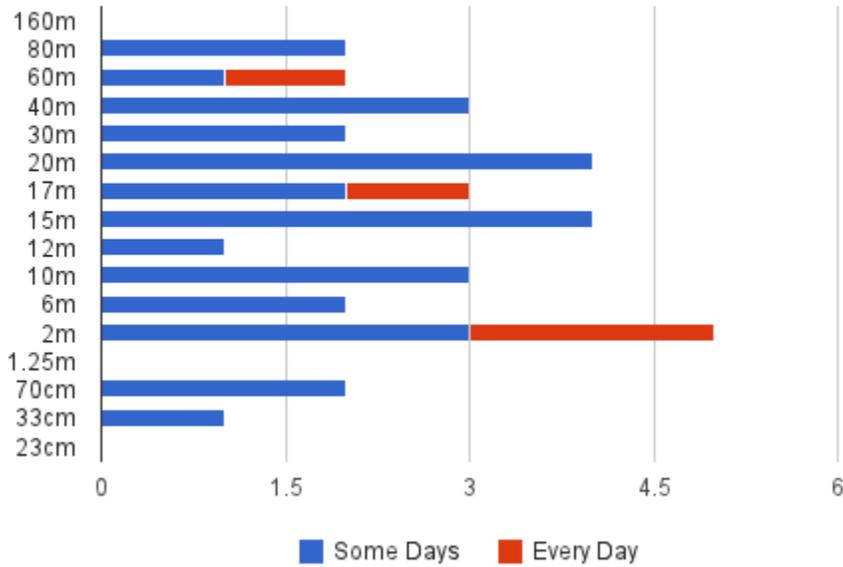
K3WRY, KJ4WLH, W4TY, WA1UQO, WA3J, WA4SSG

We followed up the "Radio Run" with a survey of participants to find out what they thought and how they operated. Here are 2 charts of their responses:

Modes of Operation



Bands Worked



Quotes from participants:

"It started as a challenge and became a normal fun part of every day. The day didn't seem complete unless I had made contact with the group on the air. It added real fun to each day."

"Great idea. While I probably would have been on the air anyway most days, this gave me the motivation to get on every day. As a result, I had some nice contacts and picked up some new DXCC countries."

"The Good - For the most part, lots of fun, improved my CW, met some interesting characters, made me wish I had done this sooner. The Bad - MUST HAVE BETTER ANTENNAS!!! Considering twice a year - Summer Run & Winter Run!"

Please contact Jim Bates, KJ4WLH, for any details, comments, concerns or questions. Jim can most easily be reached by e-mail at kj4wlvh@arrl.net.

The SWAP SHOP

Club members may list their wares in the newsletter. Send descriptive information to Armand at waluqo@arrl.net, or call me at 804-454-0564. The Swap Shop is presented in the newsletter as a benefit to our members. RARC takes no responsibility for items sold or traded in this newsletter. The ad will appear three times unless extended. Interested parties will contact you directly. **You must be an RARC member to place an ad.**

For Sale: Icom IC 7600 HF transceiver. Mint condition. Original owner. Factory boxes. All original accessories and manual. Will include LDG M 7600 external analog meter. \$3,000. Win Grant, WA4SSG, 301-8847.

For Sale: Kenwood TK-981 FM transceivers for 900 MHz, used in good condition, bench checked, 15 watt, preprogrammed for local and national simplex and repeater frequencies. Includes microphone, power cord and mounting bracket. These are being made available at cost to promote local activity, price \$125. Get yours now and join us on simplex or the soon-to-be announced repeater. Also available, 30 watt capable transceivers for \$145, trade-ins taken. Contact Dave Meier, N4MW, n4mw@msn.com

Wanted: I am looking for three back issues of Electric Radio magazine. The December 2001 through February 2002 issues. Volumes 51 through 53. Would like to borrow them if possible for a short time. Armand, waluqo@arrl.net, or (804) 454-0564.

Thought for the Day

Light travels faster than sound. This is why some people appear bright until you hear them speak.

73 de:

Win Grant	WA4SSG	PRESIDENT	(804) 272-9695	wa4ssg(at)arrl.net
Pete Fundinger	AA4PF	VICE-PRESIDENT	(804) 639-5573	aa4pf(at)verizon.net
Patricia Johnson	N8WEA	SECRETARY		
Richard Arnold	WA4FEH	TREASURER		

